

REMARKS

Favorable reconsideration of the present application is respectfully requested.

All of the original claims have been cancelled in favor of new Claim 11. The rejection under 35 U.S.C. § 112 is believed to have been rendered moot by this amendment.

New Claim 11 recites that the flange of the fixed-side raceway member, the knuckle arm of the vehicle body and the caliper mount member are fixed to each other with a bolt, wherein the flange of the fixed-side raceway member is positioned at an axially outer side relative to the knuckle arm and the caliper mount member, and the brake torque sensor is positioned on an axially outer surface of the flange at the fixed-side raceway member. Basis for this is found in Figs. 3(a)-3(b), wherein the flange 15 is positioned at an axially outer side relative to the knuckle arm 6 and the caliper mount member 16, and the brake torque sensor 2a is positioned on an axially outer surface of the flange 15.

According to the feature of the invention set forth in the claims, a brake torque sensor 2a is provided on a flange 15 integral with a fixed-side raceway member 3. This permits a value corresponding to the brake torque to be detected at a location close to the wheel side, to provide brake torque data with high accuracy. Cancelled Claims 1, 3 and 10 were rejected under 35 U.S.C. §103 as being obvious over Swift in view of Salou et al. Additionally, new Claim 11 also recites the feature of cancelled Claim 9 that the flange of the fixed side raceway member, the knuckle arm of the vehicle body and the caliper mount member are fixed to each other with a bolt. Claim 9 had been rejected under 35 U.S.C. §103 as being obvious over Swift in view of Salou et al., and further in view of Japanese Patent Publication JP2001-304309 (Nomura), which was cited to teach a bolt fixing a knuckle arm, a fixed side raceway and a caliper mount member. It is nonetheless respectfully submitted that new Claim 11 defines over this prior art.

Initially, Applicants note that the fixed side raceway member is now recited as having the raceway for the rolling bodies. The interface 5 of Salou et al includes both the caliper mount member (projections 43 and 44) and the mounting of the sensor modules M. However, the fixed raceway member which has the raceway for the rolling bodies for rotation of the rotating raceway 3 in Salou et al is the fixed raceway 2. The fixed raceway 2 and the interface 5 are not integral but are instead connected by bolts passing through the holes 22. Therefore, the flanges 43 and 44 of Salou et al are not “integral with the fixed-side raceway member.” Salou et al therefore could not teach modifying Swift to provide a hub with a fixed side raceway having a flange, wherein a brake torque sensor in the form of a strain gauge is fixed to the flange.

In any case, as the Office Action has recognized, neither Swift nor Salou et al teaches the flange of a fixed side raceway member, a knuckle arm of a vehicle body and a caliper mount member being fixed to each other with a bolt. Nomura discloses the extension mounting part 17 of a brake caliper 15, the mounting flange 16 of a fixed side raceway member 12 and the knuckle arm 19 of a vehicle body being fixed to each other with a single bolt 21. However, the mounting flange 16 of the fixed side raceway member in the arrangement of Nomura is positioned axially in the middle of the elements fastened using the bolt. It is therefore difficult to mount the brake torque sensor on the mounting flange 16 in Nomura. Moreover, even if the brake torque sensor were mounted on the mounting flange of Nomura, its reading would be influenced by the tightening of the bolt, which can reduce measurement accuracy.

Claim 11 therefore now additionally recites that the brake torque sensor is positioned on an axially outer surface of the flange of the fixed side raceway member, which is itself positioned at an axially outer side relative to the knuckle arm and the caliper mount member.

This relative arrangement is not taught in Nomura and overcomes the disadvantages thereof.

New Claim 11 is therefore believed to define over this prior art.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicits an early Notice of Allowability.

Respectfully submitted,

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